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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,864	09/19/2001	Reinhard Doenges	1998DE503/Cont.	1612

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EXAMINER	
WHITE, EVERETT NMN	

ART UNIT	PAPER NUMBER
1623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/955,864	DOENGES ET AL.	
	Examiner	Art Unit	
	EVERETT WHITE	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. *09/427,351* .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. The amendment filed August 19, 2003 has been received, entered and carefully considered. The amendment affects the instant application accordingly:

(A) Claims 9 and 10 have been canceled;
(B) Claims 1-8 have been amended;
(C) Comments regarding Office Action have been provided drawn to
  (a) 112, 2nd paragraph rejection, which has been maintained in part;
  (b) 101 improper use rejection, which has been withdrawn;
  (c) 101 double patenting rejection, which has been withdrawn;
  (d) 102(b) rejection, rendered moot by new ground of rejection over a references already of record.

2. Claims 1-8 are pending in the case.

3. The text of those sections of Title 35, U. S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 4 were amended to recite the limitation "alkyl modified groups" in line 16 of Claim 3 and line 2 of Claim 4. There is insufficient antecedent basis for this limitation in the claims. What groups are the claims referring to as representative of "alkyl modified groups"? This lack of clarification renders the claims vague and indefinite.

6. Applicant's arguments filed August 19, 2003 have been fully considered but they are not persuasive. How is the alkyl group being modified? Reference to the alkyl modified groups having a DS from 0.001 to 0.2 or from 0.01 to 0.04 in Claims 3 and 4 appears to be referring to the alkyl group in Claim 7, which has a DS from 0.0001 to 1.0.

However, Claim 7 does not indicate that this alkyl group is modified. If applicants intended for the phrase "alkyl modified group" to refer to the sulfoalkyl group or the hydroxyalkyl group in Claim 7, then the degree of substitution for these groups are being broaden in Claims 3 and 4, which is improper under 35 U.S.C. 112, 2nd paragraph.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 2-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyajima et al (EP 781,780, already of record).

Applicants claim a process for preparing cellulose ether comprising etherifying cellulose with an etherifying agent from the group of alkylene oxides and etherifying with a C_{12} or $C_{15\text{-}17}$ alkyl glycidyl ether and a sulfonate, with base catalysis to form a hydroxyalkylcelluloses having on average from 0.001 to 1.0 alkyl group per anhydroglucose unit substitutions and from 0.01 to 0.1 sulfoalkyl group per anhydroglucose unit, wherein the degree of hydroxyalkylation is greater than 2.3. Additional limitation in the dependent claim includes a formula of the cellulose ether; additional limitations for the amount of alkyl group per anhydroglucose unit substitutions and the sulfoalkyl group per anhydroglucose unit substitutions; and the sulfoalkyl groups being selected as sulfoethyl groups.

The Miyajima et al EP reference discloses a process for preparing a polysaccharide derivative obtainable by substituting a part or the whole of hydrogen atoms of hydroxyl groups in a polysaccharide or a derivative thereof with the following substituents (A) and (B), wherein (A) is a hydrophobic group that may contain a linear or branched alkyl group having from 10 to 40 carbon atoms and (B) is a sulfoalkyl group (see page 3, 1st paragraph). See the paragraph bridging pages 4 and 5 wherein

Miyajima et al discloses that substituent (A) is obtained from a hydrophobizing agent, which may be selected as a glycidyl ether compound and the substitutent (B) is obtained from a sulfonating agent, which may be selected as a C_{1-5} alkanesulfonic acid, which anticipate the subject matter of instant Claim 6 when the sulfoalkyl group is a sulfoethyl group. The 1st paragraph of page 3 further discloses that the degree of substitution for substituent (A) per monosaccharide residue is from 0.001 to 1.0 and the degree of substitution for substituent (B) per monosaccharide residue is from 0.01 to 2.0, which anticipates the degree of substitution set forth in the instant claims of from 0.001 to 1.0 alkyl group per anhydroglucose unit substitutions and from 0.01 to 0.1 sulfoalkyl group per anhydroglucose unit substitutions. At page 5, 3rd paragraph, the Miyajima et al EP reference discloses examples of the polysaccharide derivatives that are useful for the practice of the invention thereof, which include hydroxyethyl cellulose and hydroxypropyl cellulose being listed in a group as being preferred. This paragraph further discloses that the subsitutents of the polysaccharides, which include hydroxyethyl and hydroxypropyl are disclosed as being present in the polysaccharides at a degree of substitution from 0.1 to 10, which anticipates the degree of hydroxyalkylation of greater that 2.3 set forth for the cellulose ether in the instant Claims. The Miyajima et al EP reference also discloses in the 5th and 6th paragraph on page 4 that the substituents (A) and substituents (B) groups may be substituted for not only hydrogen atoms of hydroxy groups directly bonded to a polysaccharide molecule, but also hydrogen atoms of hydroxy groups in the hydoxyethyl and/or hydroypropyl groups bonded to a polysaccharide molecule. This statement reads on the preparation of the cellulose ether described using the formula set forth in instant Claim 3 when the sum of all (p+q+r) added over R1, R2 and R3 per anhydroglucose unit is on average greater than 1.3 and less than 4.5. Applicants attention is further directed to Example 6 of the Miyajima et al EP reference, which set forth the preparation of a hydrophobized hydroxyethyl cellulose derivative wherein the preparation is carried out using an aqueous solution of sodium hydroxide, palmitylglycidyl ether, and sodium vinylsulfonate, which anticipate the base catalyst, alkyl glycidyl ether, and sulfonate set forth in the instant claims. The description of the process for preparing a polysaccharide derivative

in the Miyajima et al EP reference as described above anticipates the instantly claimed process for preparing the cellulose ether of Claims 2-8.

9. Applicant's arguments with respect to Claims 2-8 have been considered but are moot in view of the new ground(s) of rejection.

10. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Miyajima et al (EP 781,780, already of record).

Applicants claim a cellulose ether in the form a product-by-process claim, comprising etherifying cellulose with an etherifying agent from the group of alkylene oxides and etherifying with a C_{12} or C_{15-17} alkyl glycidyl ether and a sulfonate , with base catalysis to form a hydroxyalkylcelluloses having on average from 0.001 to 1.0 alkyl group per anhydroglucose unit substitutions and from 0.01 to 0.1 sulfoalkyl group per anhydroglucose unit, wherein the degree of hydroxyalkylation is greater than 2.3.

The Miyajima et al EP reference discloses a polysaccharide derivative obtainable by substituting a part or the whole of hydrogen atoms of hydroxyl groups in a polysaccharide or a derivative thereof with the following substituents (A) and (B), wherein (A) is a hydrophobic group that may contain a linear or branched alkyl group having from 10 to 40 carbon atoms and (B) is a sulfoalkyl group (see page 3, 1st paragraph). See the paragraph bridging pages 4 and 5 wherein Miyajima et al discloses that substituent (A) is obtained from a hydrophobizing agent, which may be selected as a glycidyl ether compound and the substitutent (B) is obtained from a sulfonating agent, which may be selected as a C_{1-5} alkanesulfonic acid. The 1st paragraph of page 3 further discloses that the degree of substitution for substituent (A) per monosaccharide residue is from 0.001 to 1.0 and the degree of substitution for substituent (B) per monosaccharide residue is from 0.01 to 2.0, which anticipate the degree of substitution set forth in the instant claims of from 0.001 to 1.0 alkyl group per anhydroglucose unit substitutions and from 0.01 to 0.1 sulfoalkyl group per anhydroglucose unit substitutions. At page 5, 3rd paragraph, the Miyajima et al EP reference discloses examples of the polysaccharides derivatives that are useful for the practice of the invention thereof, which include hydroxyethyl cellulose and

hydroxypropyl cellulose being listed in the group as being preferred. This paragraph further discloses that the subsitutents of the polysaccharides, which include hydroxyethyl and hydroxypropyl are disclosed as being present in the polysaccharides at a degree of substitution from 0.1 to 10, which anticipates the degree of hydroxyalkylation of greater that 2.3 set forth for the cellulose ether in instant Claim 1.

With regard to Claim 1 being in the form of a product-by-process claim, the office generally considers such a claim as product a claim. Applicants are reminded that process limitations cannot impart patentability to a product that is not patentably distinguished over the prior art. *In re Thorpe et al.* (CAFC 1985), supra; *In re Dike* (CCPA 1968) 394 F2d 584, 157 USPQ 581; *Tri-Wall Containers, Inc.* v. *United States et al.* (Ct Cls 1969) 408 F2d 748, 161 USPQ 116; *In re Brown et al.* (CCPA 1972) 450 F2d 531, 173 USPQ 685; *Ex parte Edwards et al.* (BPAI 1986) 231 USPQ 981. The description of the polysaccharide derivative in the Miyajima et al EP reference as described above anticipates the instantly claimed cellulose ether of Claim 1.

11. Applicant's arguments with respect to Claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Summary

12. All the claims are rejected.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Examiner's Telephone Number, Fax Number, and Other Information

14. For 24 hour access to patent application information 7 days per week, or for filing applications, please visit out website at **www.uspto.gov** and click on the button "Patent Electronic Business Center" for more information.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is (703) 308-4621. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson, can be reach on (703) 308-4624. The fax phone number for this Group is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

E. White

E.White

James O. Wilson
Supervisory Primary Examiner
Technology Center 1600